



## AGM Front Terminal Batteries

Solutions for the toughest requirements

## *T*he company

Triathlon System GmbH is your specialist for battery-operated electrical systems with branches across Germany. Our comprehensive and competent consulting is based on our specialist know-how and many years of experience in battery and charger technology.

Our own FXM production at the Isen site in Munich, one of the oldest battery manufacturer's in Germany, guarantees quality "Made in Germany".

Our product range includes batteries of all current technologies, as well as emergency lighting systems, UPS systems, DC power systems and systems for many other applications. Our installation and service teams ensure the installation and proper functioning of our products. The range of services is supported by reputable and reliable partners only.

**Only the sum of the  
benefits decides!**



# Triathlon AGM Batteries

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## *P*roduct Information

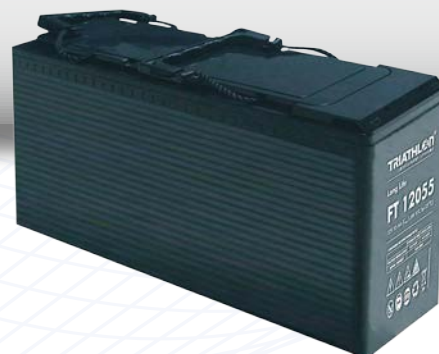
The Triathlon FT range with AGM technology stands for the highest demands. Areas of application include uninterruptible power supplies (UPS), telecommunications, information technology and security lighting.

The highest quality standards are met through:

- ✓ Certification in line with ISO 9001 and ISO 14001
- ✓ IEC 60896 Parts 21 & 22 and BS 6290 Part 4
- ✓ Extensive end testing of products prior to dispatch

### Technical features

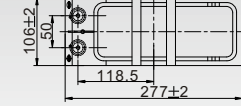
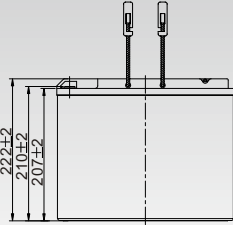
- ✓ Sealed VLRA (valve-regulated lead acid) batteries – electrolyte is fixed in a glass mat
- ✓ Outstanding high-current capability thanks to low internal resistance
- ✓ High power density, low size ratio
- ✓ Maintenance-free
- ✓ Safety valve protects against excessive high pressure
- ✓ Low self-discharge rate: Can be stored for up to 9 months under normal conditions at +20 °C.
- ✓ Service life of 12 years or more in continuous battery power supply mode according to EUROBAT
- ✓ No transport restrictions (in line with IATA, DGR, sentence A67)
- ✓ Applications:
  - UPS systems
  - Stationary back-up power systems in power stations and remote stations
  - Telecommunications and electrical equipment
  - Switchgear
  - Automation technology, monitoring equipment, robotic systems
  - Wireless and radio systems
  - Distance measurement systems
  - Signalling systems



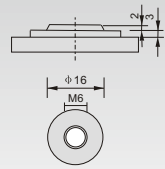
Space-saving battery system. especially suitable for rack mounting

## Technical Diagrams

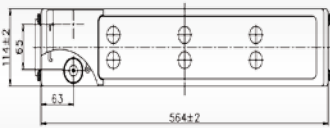
FT 12055



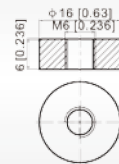
T6 connection



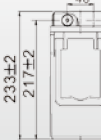
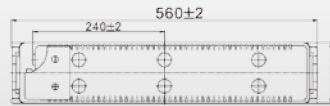
FT 12070



T6 connection



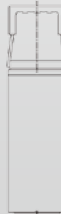
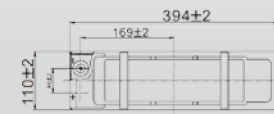
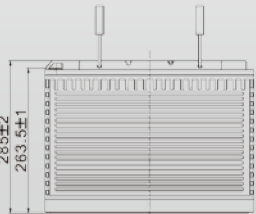
FT 12100



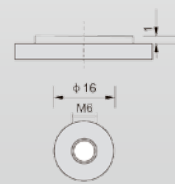
T13 connection



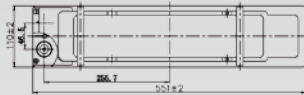
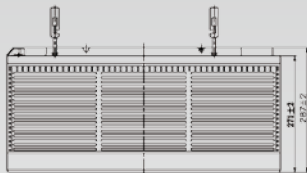
FT 12100 H



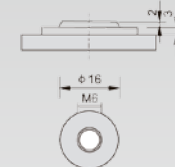
T6 connection



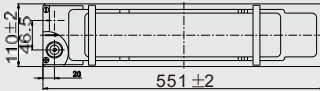
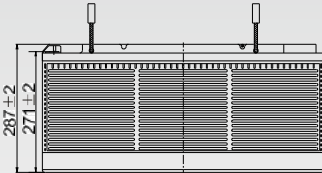
FT 12125



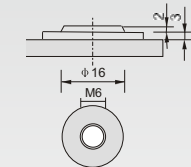
T6 connection



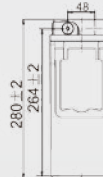
FT 12150



T6 connection



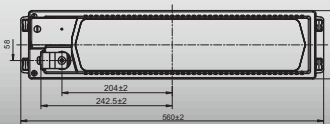
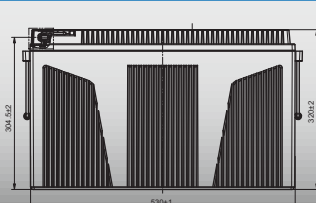
FT 12180



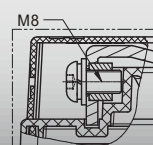
T13 connection



FT 12200



T11 connection



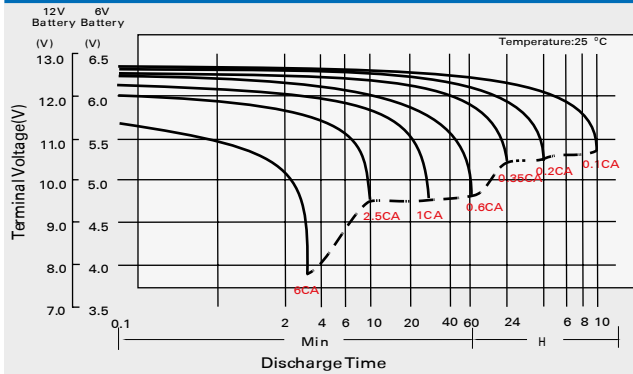
# Triathlon AGM Batteries

## Product Overview

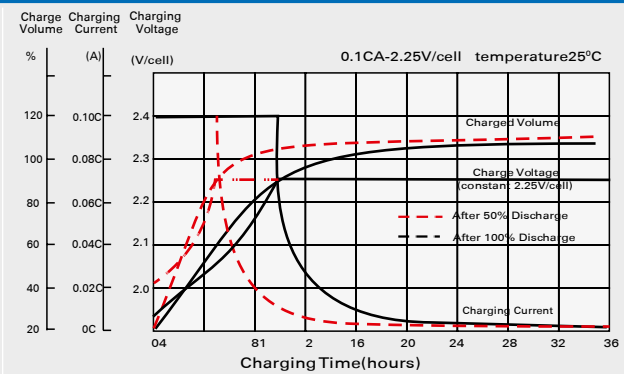
10 to 12 YEARS										
Battery type	Nominal voltage	Nominal capacity C <sub>10</sub>	Nominal capacity C <sub>20</sub>	Length (L)	Width (B)	Height (H)	Typical weight	Internal resistance	max. discharge current	Connection
	V	Ah	Ah	max. mm	max. mm	max. mm	kg	mOhm	A	
FT 12055	12	57.1	60.4	277	106	222	18.0	6.0	550	T6
FT 12070	12	72.7	76.9	564	114	187	25.5	5.2	700	T6
FT 12100	12	104.0	110.0	560	110	233	35.6	4.3	1000	T13
FT 12100 H	12	104.0	110.0	394	110	285	34.5	4.3	1000	T6
FT 12125	12	130.0	137.4	551	110	287	41.5	3.2	1100	T6
FT 12150	12	150.0	158.8	551	110	287	46.4	3.0	1200	T6
FT 12180	12	180.0	190.6	560	126	280	54.0	5.0	1360	T13
FT 12200	12	200.0	210.0	560	126	320	60.0	2.7	1600	T11

## Curves

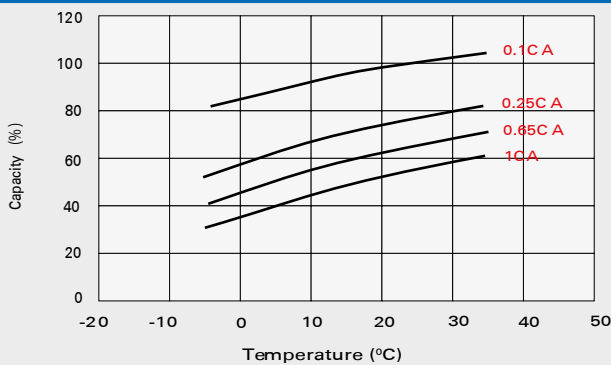
### Discharge behaviour



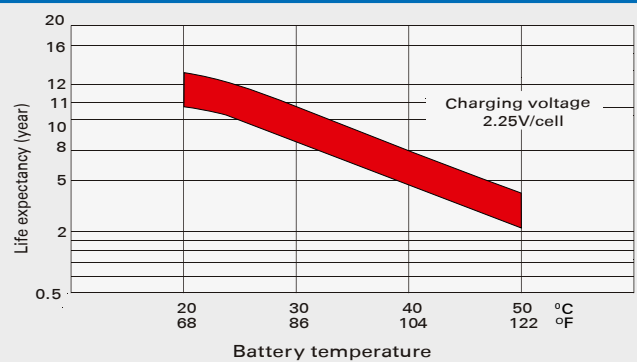
### Charge behaviour



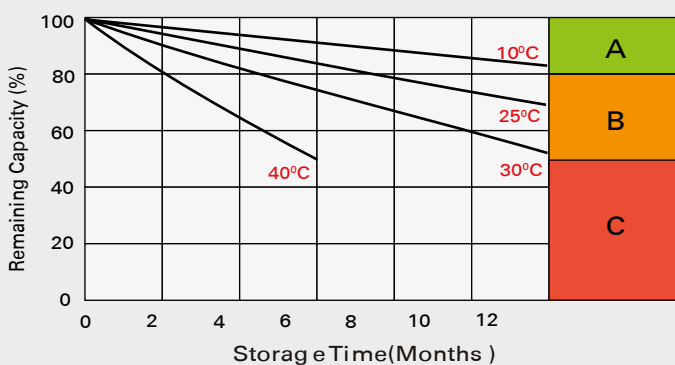
### Battery capacity in relation to temperature



### Temperature



### Self-discharge



- A** No supplementary charge required (Carry out supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Optional charging way as below:
  - Charge d for above 3 days at limited current 0.25C A and constant voltage 2.25V/cell .
  - Charge d for above 20hours at limited current 0.25C A and constant voltage 2.45V/cell .
  - Charge d for 8~10hours at limited current 0.05C A .
- C** Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this is reached.

## Discharge data in ampere

### 1.85 V/Z - discharge in ampere at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	107.3	95.7	79.7	68.4	53.7	41.6	33.8	20.2	14.5	11.7	9.66	8.40	6.54	5.46	2.89
FT 12070	136.6	121.7	101.5	87.1	68.3	53.0	43.1	25.7	18.5	14.8	12.3	10.7	8.33	6.95	3.68
FT 12100	195.1	173.9	145.0	124.4	97.6	75.7	61.5	36.7	26.4	21.2	17.6	15.3	11.9	9.92	5.26
FT 12100 H	195.1	173.9	145.0	124.4	97.6	75.7	61.5	36.7	26.4	21.2	17.6	15.3	11.9	9.92	5.26
FT 12125	243.9	217.4	181.2	155.5	122.0	94.6	76.9	45.9	33.0	26.5	21.9	19.1	14.9	12.4	6.57
FT 12150	281.9	251.3	209.5	179.8	141.0	109.3	88.9	53.0	38.2	30.6	25.4	22.1	17.2	14.3	7.60
FT 12180	338.4	301.6	251.4	215.7	169.2	131.2	106.7	63.6	45.8	36.8	30.4	26.5	20.6	17.2	9.12
FT 12200	350.7	287.5	252.9	226.7	185.7	143.2	115.7	67.5	49.4	39.6	33.2	28.7	22.8	19.0	10.1

### 1.80 V/Z - discharge in ampere at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	124.9	108.4	88.9	75.7	58.7	44.8	36.1	21.3	15.5	12.3	10.2	8.83	6.88	5.71	3.02
FT 12070	158.9	138.0	113.1	96.4	74.7	57.0	46.0	27.1	19.7	15.6	12.9	11.2	8.75	7.27	3.85
FT 12100	227.0	197.2	161.6	137.7	106.8	81.4	65.7	38.7	28.1	22.3	18.5	16.1	12.5	10.4	5.50
FT 12100 H	227.0	197.2	161.6	137.7	106.8	81.4	65.7	38.7	28.1	22.3	18.5	16.1	12.5	10.4	5.50
FT 12125	283.8	246.5	202.0	172.1	133.5	101.8	82.1	48.4	35.1	27.9	23.1	20.1	15.6	13.0	6.87
FT 12150	328.0	284.9	233.5	199.0	154.3	117.6	94.9	55.9	40.6	32.2	26.7	23.2	18.1	15.0	7.94
FT 12180	393.5	341.9	280.2	238.8	185.2	141.2	113.9	67.1	48.7	38.7	32.0	27.8	21.7	18.0	9.53
FT 12200	407.5	334.0	291.9	252.9	199.6	151.4	121.1	69.9	51.2	40.8	34.2	29.5	23.6	20.0	10.5

### 1.75 V/Z - discharge in ampere at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	141.9	119.0	96.2	80.8	61.7	46.5	37.4	21.7	15.7	12.6	10.4	8.97	6.96	5.78	3.07
FT 12070	180.6	151.5	122.4	102.9	78.5	59.2	47.6	27.6	20.0	16.0	13.2	11.4	8.86	7.35	3.91
FT 12100	258.0	216.4	174.9	146.9	112.2	84.5	68.0	39.4	28.6	22.9	18.9	16.3	12.7	10.5	5.58
FT 12100 H	258.0	216.4	174.9	146.9	112.2	84.5	68.0	39.4	28.6	22.9	18.9	16.3	12.7	10.5	5.58
FT 12125	322.5	270.5	218.6	183.7	140.3	105.7	85.0	49.3	35.7	28.6	23.6	20.4	15.8	13.1	6.98
FT 12150	372.8	312.7	252.7	212.3	162.1	122.1	98.2	57.0	41.3	33.1	27.3	23.6	18.3	15.2	8.06
FT 12180	447.2	375.2	303.2	254.8	194.6	146.6	117.9	68.4	49.5	39.7	32.8	28.3	21.9	18.2	9.68
FT 12200	449.7	368.6	314.2	269.6	207.6	156.1	124.7	71.5	52.0	41.3	34.6	29.9	24.0	20.1	10.6

### 1.70 V/Z - discharge in ampere at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	155.5	127.3	101.3	84.1	63.5	47.6	37.9	22.0	15.9	12.7	10.5	9.08	7.06	5.83	3.09
FT 12070	197.9	162.0	128.9	107.0	80.8	60.5	48.2	28.0	20.2	16.1	13.3	11.6	8.98	7.42	3.93
FT 12100	282.7	231.5	184.2	152.9	115.5	86.5	68.9	40.0	28.8	23.0	19.0	16.5	12.8	10.6	5.62
FT 12100 H	282.7	231.5	184.2	152.9	115.5	86.5	68.9	40.0	28.8	23.0	19.0	16.5	12.8	10.6	5.62
FT 12125	353.4	289.3	230.2	191.1	144.4	108.1	86.1	50.0	36.1	28.8	23.8	20.6	16.0	13.3	7.03
FT 12150	408.5	334.5	266.1	220.9	166.9	124.9	99.6	57.8	41.7	33.3	27.5	23.8	18.5	15.3	8.12
FT 12180	490.1	401.4	319.4	265.1	200.3	149.9	119.5	69.3	50.0	39.9	32.9	28.6	22.3	18.4	9.75
FT 12200	478.9	392.5	329.3	280.4	214.7	159.1	126.7	72.5	52.7	41.9	34.9	30.3	24.3	20.3	10.7

# Triathlon AGM Batteries, FT Range

## Discharge data in ampere

### 1.67 V/Z - discharge in ampere at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	164.3	131.7	103.8	85.8	64.3	47.7	38.1	22.1	16.0	12.8	10.6	9.19	7.15	5.89	3.11
FT 12070	209.2	167.7	132.1	109.2	81.9	60.7	48.4	28.1	20.3	16.2	13.4	11.7	9.10	7.49	3.96
FT 12100	298.8	239.5	188.8	156.0	117.0	86.8	69.2	40.1	28.9	23.1	19.1	16.6	12.9	10.7	5.65
FT 12100 H	298.8	239.5	188.8	156.0	117.0	86.8	69.2	40.1	28.9	23.1	19.1	16.6	12.9	10.7	5.65
FT 12125	373.5	299.4	236.0	195.0	146.2	108.5	86.5	50.1	36.3	29.0	24.0	20.9	16.3	13.4	7.06
FT 12150	431.8	346.1	272.8	225.5	169.0	125.4	100.0	58.0	41.9	33.5	27.7	24.1	18.8	15.5	8.16
FT 12180	517.8	415.3	327.3	270.6	202.8	150.5	120.0	69.6	50.3	40.2	33.3	29.0	22.5	18.5	9.80
FT 12200	500.7	410.4	34.4	286.3	219.1	162.5	129.2	73.5	53.1	42.3	35.4	30.6	24.5	20.5	10.8

### 1.60 V/Z - discharge in ampere at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	175.5	138.5	107.8	89.7	65.9	49.0	39.1	22.4	16.3	13.0	10.8	9.35	7.32	6.00	3.12
FT 12070	223.4	176.2	137.2	114.1	83.9	62.4	49.7	28.6	20.7	16.6	13.8	11.9	9.31	7.63	3.98
FT 12100	319.1	251.8	196.0	163.0	119.9	89.1	71.0	40.8	29.3	23.4	19.3	16.7	13.0	10.8	5.68
FT 12100 H	319.1	251.8	196.0	163.0	119.9	89.1	71.0	40.8	29.3	23.4	19.3	16.7	13.0	10.8	5.68
FT 12125	398.9	314.7	245.0	203.8	149.9	111.4	88.8	51.0	37.0	29.6	24.6	21.3	16.6	13.6	7.10
FT 12150	461.1	363.8	283.2	235.5	173.3	128.7	102.6	59.0	42.8	34.2	28.5	24.6	19.2	15.8	8.21
FT 12180	553.1	436.6	339.9	282.7	207.9	154.5	123.1	70.8	51.3	41.1	34.2	29.5	23.1	18.9	9.85
FT 12200	522.5	428.3	349.9	294.7	223.5	164.9	131.2	74.4	53.8	42.7	35.7	30.9	24.8	20.7	10.8

## Discharge data in watt per cell

### 1.85 V/Z - discharge in watt per cell at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	199.4	178.6	150.4	130.4	103.4	80.8	65.9	39.6	28.6	23.0	19.1	16.7	13.1	10.9	5.79
FT 12070	253.7	227.3	191.4	165.9	131.6	102.9	83.9	50.4	36.4	29.3	24.3	21.2	16.6	13.9	7.37
FT 12100	362.5	324.8	273.4	237.0	187.9	147.0	119.9	72.0	52.0	41.9	34.8	30.3	23.7	19.8	10.5
FT 12100 H	362.5	324.8	273.4	237.0	187.9	147.0	119.9	72.0	52.0	41.9	34.8	30.3	23.7	19.8	10.5
FT 12125	453.1	405.9	341.8	296.3	234.9	183.7	149.9	90.0	65.0	52.4	43.5	37.9	29.7	24.8	13.2
FT 12150	523.8	469.3	395.1	342.5	271.6	212.4	173.2	104.0	75.1	60.5	50.2	43.8	34.3	28.7	15.2
FT 12180	628.5	563.2	474.2	411.0	325.9	254.8	207.9	124.8	90.2	72.7	60.3	52.6	41.1	34.4	18.2
FT 12200	654.9	536.8	477.0	431.8	357.7	278.0	225.5	132.4	97.2	78.2	65.8	57.1	45.5	38.0	20.2

### 1.80 V/Z - discharge in watt per cell at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	228.2	200.1	165.4	142.2	111.4	86.3	70.0	41.5	30.3	24.1	20.0	17.5	13.7	11.4	6.04
FT 12070	290.5	254.7	210.5	181.0	141.8	109.8	89.1	52.8	38.5	30.7	25.5	22.2	17.4	14.5	7.69
FT 12100	415.0	363.9	300.7	258.5	202.5	156.9	127.3	75.4	55.0	43.8	36.4	31.7	24.9	20.7	11.0
FT 12100 H	415.0	363.9	300.7	258.5	202.5	156.9	127.3	75.4	55.0	43.8	36.4	31.7	24.9	20.7	11.0
FT 12125	518.7	454.8	375.8	323.1	253.2	196.1	159.1	94.3	68.8	54.8	45.5	39.7	31.1	25.9	13.7
FT 12150	599.6	525.8	434.5	373.6	292.7	226.7	183.9	109.0	79.5	63.3	52.6	45.9	35.9	29.9	15.9
FT 12180	719.3	631.0	521.4	448.3	351.2	272.0	220.7	130.8	95.4	76.0	63.1	55.1	43.1	35.7	19.0
FT 12200	752.1	616.5	543.2	474.8	378.7	291.7	234.7	136.2	100.2	80.2	67.3	58.3	47.0	39.7	21.0



## Discharge data in watt per cell

### 1.75 V/Z - discharge in watt per cell at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	254.4	216.1	176.8	150.3	116.1	88.7	72.2	42.1	30.6	24.6	20.4	17.7	13.8	11.5	6.12
FT 12070	323.8	275.1	225.0	191.3	147.8	112.9	91.8	53.6	39.0	31.4	26.0	22.5	17.6	14.7	7.80
FT 12100	462.6	393.0	321.4	273.3	211.1	161.4	131.2	76.6	55.7	44.8	37.1	32.1	25.2	20.9	11.1
FT 12100 H	462.6	393.0	321.4	273.3	211.1	161.4	131.2	76.6	55.7	44.8	37.1	32.1	25.2	20.9	11.1
FT 12125	578.2	491.2	401.8	341.6	263.9	201.7	164.0	95.7	69.6	56.0	46.4	40.2	31.4	26.2	13.9
FT 12150	668.4	567.9	464.5	394.9	305.0	233.2	189.6	110.6	80.5	64.7	53.6	46.5	36.3	30.2	16.1
FT 12180	802.5	681.5	557.4	473.8	366.1	279.8	227.5	132.8	96.6	77.7	64.4	55.7	43.5	36.3	19.3
FT 12200	816.8	669.5	577.5	501.3	390.5	298.1	240.6	138.8	101.4	80.9	68.0	59.0	47.6	40.1	21.2

### 1.70 V/Z - discharge in watt per cell at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	270.9	226.0	183.7	155.2	118.8	90.4	72.9	42.6	30.9	24.8	20.5	17.9	14.0	11.6	6.16
FT 12070	344.7	287.7	233.7	197.5	151.3	115.1	92.8	54.2	39.3	31.5	26.1	22.7	17.8	14.8	7.85
FT 12100	492.5	411.0	333.9	282.2	216.1	164.5	132.5	77.5	56.2	45.0	37.2	32.5	25.4	21.0	11.2
FT 12100 H	492.5	411.0	333.9	282.2	216.1	164.5	132.5	77.5	56.2	45.0	37.2	32.5	25.4	21.0	11.2
FT 12125	615.6	513.7	417.4	352.7	270.1	205.6	165.7	96.9	70.2	56.3	46.5	40.6	31.8	26.4	14.0
FT 12150	711.6	593.9	482.5	407.7	312.2	237.6	191.5	112.0	81.2	65.0	53.8	46.9	36.7	30.5	16.2
FT 12180	853.8	712.7	579.0	489.3	374.7	285.2	229.8	134.4	97.4	78.1	64.5	56.3	44.1	36.6	19.4
FT 12200	850.2	696.9	597.0	517.4	401.8	302.5	243.6	140.4	102.6	81.9	68.4	59.7	48.1	40.5	21.3

### 1.67 V/Z - discharge in watt per cell at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	283.5	233.0	187.4	157.8	120.1	90.5	73.0	42.7	31.0	24.9	20.7	18.0	14.2	11.7	6.19
FT 12070	360.8	296.5	238.6	200.8	152.9	115.2	93.0	54.3	39.4	31.7	26.3	22.9	18.0	14.9	7.88
FT 12100	515.4	423.6	340.8	286.8	218.4	164.5	132.8	77.6	56.1	45.1	37.3	32.6	25.5	21.2	11.3
FT 12100 H	515.4	423.6	340.8	286.8	218.4	164.5	132.8	77.6	56.1	45.1	37.3	32.6	25.5	21.2	11.3
FT 12125	644.3	529.5	426.0	358.5	273.0	205.6	166.0	97.0	70.4	56.6	47.0	41.0	32.2	26.6	14.1
FT 12150	744.8	612.1	492.5	414.5	315.5	237.7	191.9	112.2	81.4	65.5	54.3	47.4	37.2	30.8	16.3
FT 12180	893.8	734.6	591.0	497.4	378.7	285.3	230.3	134.6	97.7	78.6	65.2	56.8	44.6	36.9	19.5
FT 12200	885.5	725.8	614.6	526.3	409.1	308.1	248.0	142.2	103.2	82.6	69.3	60.1	48.5	40.8	21.4

### 1.60 V/Z - discharge in watt per cell at 25°C

Battery type	5 min	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
FT 12055	291.7	238.2	190.8	162.5	121.5	91.9	74.2	43.0	31.4	25.3	21.1	18.3	14.4	11.9	6.21
FT 12070	371.2	303.1	242.8	206.8	154.7	116.9	94.4	54.8	40.0	32.2	26.9	23.3	18.4	15.2	7.91
FT 12100	530.3	433.0	346.9	295.4	221.0	167.0	134.9	78.2	56.5	45.4	37.6	32.7	25.6	21.4	11.3
FT 12100 H	530.3	433.0	346.9	295.4	221.0	167.0	134.9	78.2	56.5	45.4	37.6	32.7	25.6	21.4	11.3
FT 12125	662.9	541.3	433.6	369.3	276.2	208.8	168.6	97.8	71.4	57.5	48.0	41.6	32.8	27.1	14.1
FT 12150	766.3	625.7	501.2	426.9	319.3	241.4	194.9	113.0	82.5	66.5	55.5	48.1	37.9	31.3	16.3
FT 12180	919.6	750.9	601.5	512.3	383.2	289.6	233.9	135.7	99.1	79.8	66.6	57.7	45.5	37.5	19.6
FT 12200	898.6	736.6	619.3	534.0	411.9	309.2	249.3	142.6	103.8	82.9	69.6	60.4	48.9	41.1	21.5

# Notes

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